NOVAC

THE NEWSLETTER OF THE NORTHERN VIRGINIA ASTRONOMY CLUB

Issue Number 90 **Volume 20** **July/August 2000**

NEW MEETING TIME!

Beginning on July 9, General Meetings will begin at 7 P.M

Crockett Park Access Threatened

Pete Johnson

NOVAC has enjoyed a long multi-year relationship with Crockett Park as its primary observing site. That relationship is now threatened by changes in Crockett Park's policy management. In the past, our access to the park was governed by the resident park ranger. Now it appears the Fauquier County Board of Parks and Recreation has gotten involved and feels the need to fix what is not broken. We are now in the process of renegotiating our club access to the park and as of this writing it does not look good for NOVAC. We may lose access to the park or at a minimum our access will be very restricted.

Our current access agreement will be in effect until the end of June. After that, the new policy, if any, will be in effect. Rest assured the NOVAC Board of Directors is working to preserve our use of the park. To keep the members informed, a web page will be set up on novac.com with the status of our park access agreement. Please do not attempt to observe at Crockett without consulting the web page or contacting a board member. In the fight to preserve our access to Crockett we may call on the membership for action. Please help if called upon.

President's Message

The Internet: Heartbeat of NOVAC

Pete Johnson

NOVAC's membership has grown to over 430 as of this writing, and it continues to grow. As part of your membership you receive this newsletter bimonthly. In the past the newsletter was the primary form of communication which tied the club together. That is no more. Today, the NOVAC e-mail list is the pulse of the club. Its subscribers read observing reports, lively debates on topics of interest, members' plans for impromptu observing sessions, and much more. Clearly, for those who subscribe, 80% of the club activities are discussed, planned and organized on the club e-mail list. The problem is that only about one third of the members subscribe. Which leads me to believe NOVAC is a static, every-two-months, distant world for the remaining members. So, I would like to invite the remaining two-thirds of the club to join the e-mail list and feel the pulse of NOVAC.

To subscribe, send an e-mail with "subscribe NOVAC [your e-mail address]" in the body to majordomo@mclean1.his.com If you have any problems feel free to contact myself or Kevin Brown and welcome to NOVAC live!

What's Up?

Al Schumann

So, when is the last time you took a long look at the moon? I thought so. As a deep sky aficionado, aside from lunar eclipses, I generally see the moon as a nuisance; something I look at briefly while I'm waiting for it to go away. In early May, I set up the 13-inch telescope for a galaxy gambol through Leo, Virgo, and Coma Berenices. However, because of haze, dust, pollen, et al, the sky conditions were very poor. Instead, I swung the telescope to the three-day-old moon. Plan B was hatched. As you know, over the past year I have observed and written about the sun and all the planets save Pluto. Why not continue my solar system caper with a study of the moon? But what to look for? The Apollo landing sites would be a good start, along with selected craters, rills, and the Straight Wall. I figured on following the waxing moon, studying interesting areas along the terminator, and writing it up as sort of a diary. I planned on using two telescopes; the Astroscan with the power goosed up to 34X, and the 13-inch at high power with a five-inch off-axis mask and an Orion moon filter to cut down on the light. I could look at the whole moon with the Astroscan and move in for a closer look with the big fellow. Sort of a macro/micro approach, as it were. My navigation aids were the Peterson Field Guide to the Stars and Planets, and a poster-sized lunar illustration, which I've had for years. The Peterson was especially handy at the telescope, because the pictures were real photos, south was up, east to the left, and the names were right side up. No mental gymnastics were required. Finally, I went online to priceline.com for accommodations at the Copernicus Hotel and lunar tours trip tick.com for directions. Of course, I asked for the scenic route.

Anyhow, I picked up my lunar tour with the

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Spruce Knob Report

June 2-4, 2000

John Nusbaum

The weekend of June 2-4, 2000 was the first Northern Virginia Astronomy Club trip to Spruce Knob's Gatewood Group Camping Area for the year 2000.

The forecast for Friday evening was for rain early and possible clearing late in the evening. Bob Traube, Tom Deitz, Ed and Laquetta Karch, and I were hoping to get in some early morning observing but the clearing never came. The rain and drizzle continued through the early morning hours.

Saturday morning the clouds began to disappear and a beautiful clear blue sky appeared overhead. At about 3 p.m., many more people began to arrive and soon the field was full of observers. In addition to the NOVAC members there were several people from the Charlottesville, VA area and others from Ohio who had

(Continued on page 8)

Finding the Elusive Wanderers

Ralph Marple

Sometimes it's easy, often it's not. Spotting Uranus and Neptune is often tougher than one expects because they wander into regions without readily visible stars. Pluto, always a challenge, is even more challenging when it's in a region of dim stars.

Finding the bright planets Venus, Jupiter, Saturn, and Mars is pretty easy. You just have to remember they're wanderers through the night sky and pay attention to when they'll be visible. Mercury, although relatively bright, is tricky to find because it's elusive, hugging the horizon and only popping up above it every six weeks or so. You know in advance when it'll be visible, but it's hard to clear your calendar so you can get out and see it just at sunset at a spot with a good Western horizon. Oh yeah, it has to be clear, too!

The dim planets Uranus, Neptune, and Pluto are different. They're the slowest wanders through the background stars. In fact, the Earth orbiting the Sun causes most of their apparent motion. Finding these planets differs primarily in degree of difficulty. Uranus is a fairly easy binocular object, Neptune is a good binocular or small scope challenge (3" - 6"), and Pluto is a serious challenge for larger scopes (8"+). If you have enough aperture then the problem breaks into two pieces. The first is knowing where to look. The second is whether the planets are near bright stars or recognizable asterisms.

Finding out where to look is easier than it was just a few years ago. There's now a wealth of software available that can show you exactly where these wanderers are positioned. I use SkyChart 2000 because it's inexpensive, easy to use, and has large enough databases for my purposes.

Of course, you don't have any control over where the planets are located, and their positions can change noticeably from night to night. When they get into an area with bright stars or stars in a distinctive pattern you can pick them out with relative ease. However, when one of these wanderers gets into a region devoid of brighter stars, it can be very difficult to identify.

Bright is relative. In my experience the naked-eye limiting magnitude (LM) in a suburban area is about 4.5 and at the club's dark sites it's about 5.5. Objects at the LM are barely detectable in your averted vision. This means that while mag 4.5 stars can be used as "guide stars' to help locate the planets (or any other object) at a dark site, they are of no use when the LM is 4.5. In fact, even mag 4 stars can be difficult to locate in the 'burbs. And, of course, mag 5.5 stars don't help at a dark site.

Uranus and Neptune are currently in Capricorn (Cap) which is a well-known astrological sign, but not a conspicuous astronomical constellation. Uranus is in the horns of the goat and Neptune in the hindquarters. At the western end, or tail, of the goat are two readily identifiable asterisms. One is the multiple star Alpha Capricorn (Cap) and several binocular fields below it is a delightful triangle formed by Omicron, Pi, and Rho Cap. The rest of Capricorn is impossible to trace in suburban skies and even difficult under darker skies. This makes Uranus in its current position hard to spot. Neptune's position isn't too bad for binocular viewing at a dark site. However, they'll both be easier to spot later this summer and early fall.

Pluto is currently in Ophiuchus (Oph) not far from the magnitude (mag) 2.6 star Zeta Ophiuchus that's above the claws of Scorpius. It's pretty well positioned for spotting.

Uranus

Chart 1 shows Uranus's position in Capricorn on July 15. The chart has a 10-degree field of view (FOV) with a four-degree circle around Uranus. This is the same FOV I use to show Uranus's position on the NOVAC website. I chose this FOV to ensure that there are bright stars in the field. The stars are plotted to magnitude (mag) 7 and labeled to mag 5. As you can see there are no stars near Uranus brighter than mag 7, which is why it's hard to identify. This is true during most of the summer! Uranus glows at mag 5.7 while the brightest stars on the chart are Delta (2.9), Gamma (3.7), Iota (4.3), Kappa (4.7), and Eta Cap (4.7).

Uranus will be much easier to spot in late September and early October when it's nicely positioned near Iota Cap. Chart 2 shows Uranus on October 1. Again, the FOV is ten degrees with a four-degree circle around Uranus and the stars are plotted to mag 7 and labeled to mag 5. You'll probably want to orient yourself with Gamma Cap (3.7) at the far left of the chart then move right to the field with Uranus (mag 5.7) and Iota Cap (4.3). To the right are Theta (4.1) and Eta Cap (4.8). The unlabeled stars in the four-degree FOV are 29 Cap (5.3), 30 Cap (5.4), HD202261 (6.0), and (just north of Uranus) HD202890 (6.9). Uranus should be easy to spot from suburban areas with binoculars, and much easier from darker sites where the

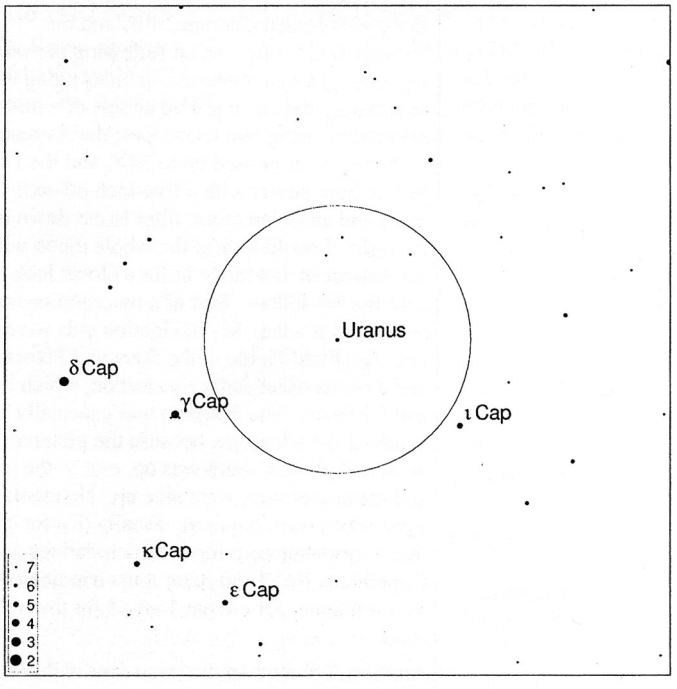

Chart 1: Uranus in Capricorn on July 15, 2000. No stars brighter than magnitude 7 are within the 4 degree field.

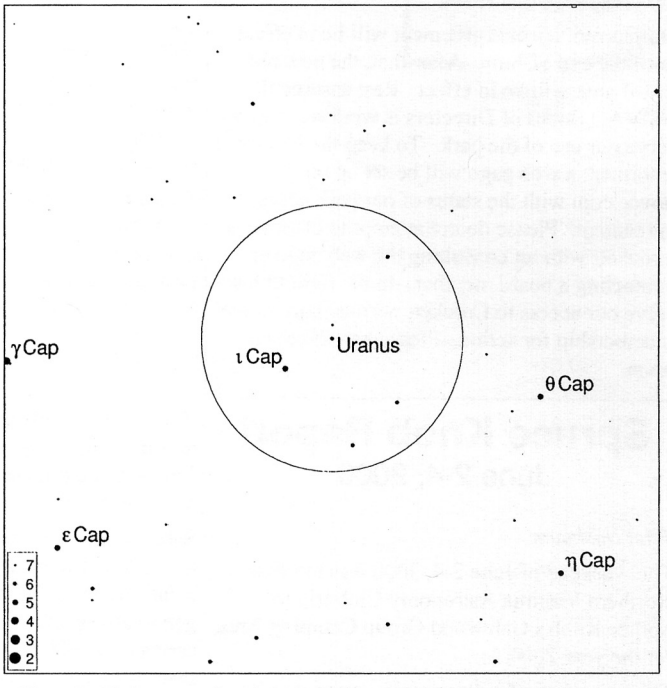

Chart 2: Uranus on October 1, 2000, near the magnitude 4.3 star Iota Cap.

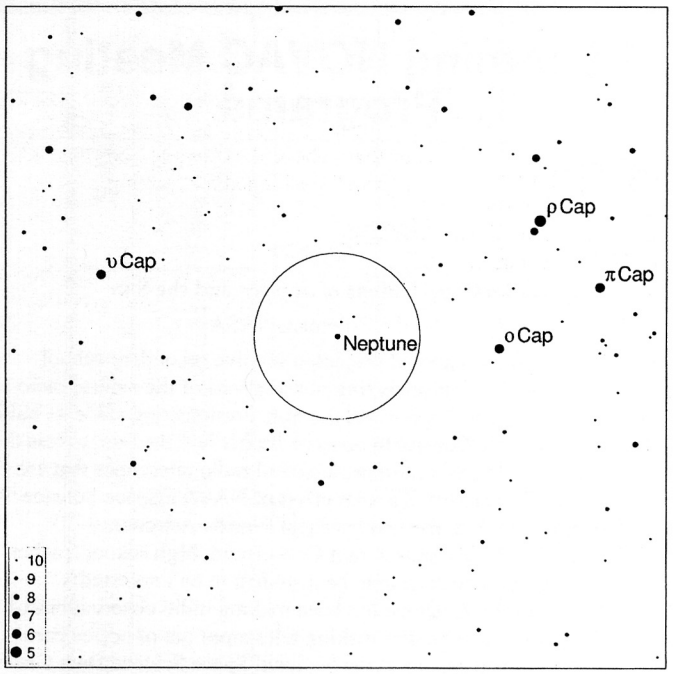

Chart 3: Neptune in Capricorn on June 15, 2000. About one degree from the nearest signpost star, Omicron Cap.

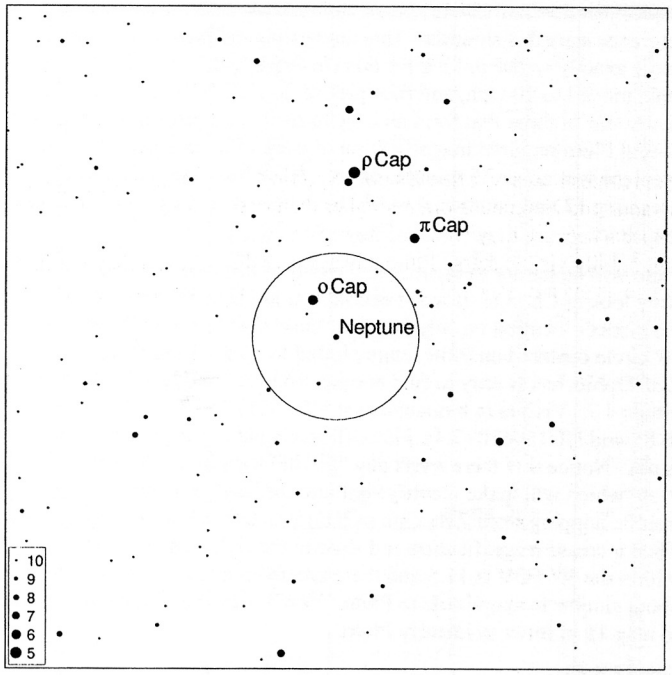

Chart 4: Neptune on August 1, 2000. Being near Omicron Cap. makes it easier to spot.

guide stars are visible to the naked eye.

Neptune

Spotting Neptune from a suburban location in 10x50 binoculars is difficult. However, at a dark sites it's not too hard. I was able to pick it out of the eastern sky glow at Mickie Gordon a little over two hours after it rose early on June 8.

Neptune's position on June 15 is shown in Chart 3. It's located all by itself midway between two relatively bright stars in Capricorn. The chart has a four-degree field of view with a one-degree circle around Neptune. The stars are plotted to mag 10 and labeled to mag 6. The brightest star on this chart is Rho Cap at mag 4.8, so none of the stars are visible to the naked eye from the suburbs. Rho, Pi (5.3), and Upsilon (5.1) Cap might be visible from a dark site. The labeled stars are visible through binoculars with LM 4.5 skies, although Neptune probably isn't. You will be able to see it through a small scope, but trying to find the Rho, Pi, Omicron triangle has given me trouble. Of course, finding Neptune from a dark site will be easier.

Neptune will be easier to spot later this summer and into fall as it drifts just below the Omicron, Pi, Rho Cap triangle. Chart 4 shows Neptune's position on August 1. It has a four-degree FOV with a one-degree circle centered on Neptune (mag 7.8). The stars are plotted to mag 10 and labeled to mag 6. The unlabeled stars in the one-degree circle are HD195298 (8.9), HD195076 (8.6), and HD194809 (9.1)

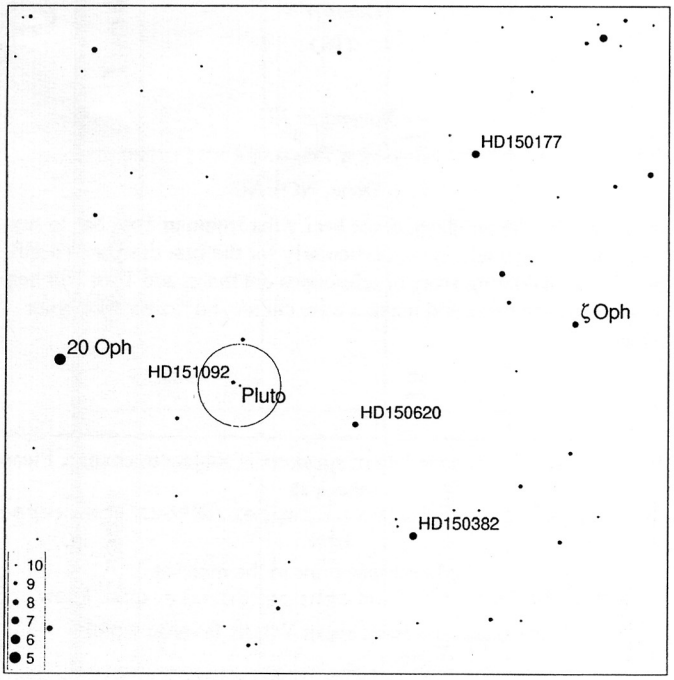

Chart 5: Pluto in Ophiuchus on June 8, 2000, near the signpost star HD151092.

Pluto

I spotted Pluto on my second attempt using my 10" f/6 reflector. I'd prepared charts for June 3 at Sky Meadows and thought I'd spotted it. However, it turned out that I hadn't properly set the precision of the charting software so the indicated position of Pluto was off by about 15 arc minutes. I now know it was viewable in my 10" reflector as well as in Mike Mills' 8". It was really frustrating to know it was in the eyepiece but we were looking at the wrong faint little dot. My apologies to the others that were there that night for providing the misleading information.

Chart 5 shows Pluto where Mike, Tim Gleason, and I successfully spotted it at Mickie Gordon (MG) on June 8. The chart has a four-degree FOV with a 30' circle centered on Pluto. The stars are plotted to mag 10 and labeled to mag 8. I'm not very skilled at evaluating transparency, but it wasn't as good at MG as it had been at Sky Meadows several days previously. Averted vision was required to see Pluto and it popped in and out of view. I have no doubt better transparency would have help to see it. And, of course, darker skies would help too. Nonetheless, Pluto is well-positioned near good

(Continued on page 4)

reference stars this summer. This made a big difference in our ability to know exactly where to look for this elusive target. We started with Zeta Oph, moved to 20 Oph, and then picked up HD151092 (8.5) which is the center star of three that form an easy to recognize "dog-leg" asterism. Seeing Pluto required magnification of over 150x and the FOV in the eyepiece was about 15 minutes of arc. If the field had only included stars mag 12 and dimmer, it would have been nearly impossible to pick out Pluto.

Pluto will be harder to identify at the end of July and through August. Now look at Chart 6. It won't enable you to identify Pluto, but it shows the planet's location on July 30. This chart also has a four-degree FOV, a 30' circle centered on Pluto, stars plotted to mag 10 and labeled to mag 8. Zeta Ophiuchus is easy to find at magnitude 2.6 and so is 20 Oph at magnitude 4.7. Visible in binoculars are HD150177 (6.3), and HD150382 (6.8), and HD150620 (7.4). Pluto, flickering at a meager magnitude 13.8, is not. Notice that there aren't any "bright" stars in the 30' field around Pluto which will make identifying Pluto difficult. You shouldn't have trouble hopping from Zeta Oph to HD150620 in a low power eyepiece. Then increase magnification and slide to the right. The brightest star within the 30' FOV is 11.5 and there are about a half dozen scattered about similar in magnitude to Pluto. You'll want a chart that plots stars to mag 15 in order to identify Pluto.

Good Luck!

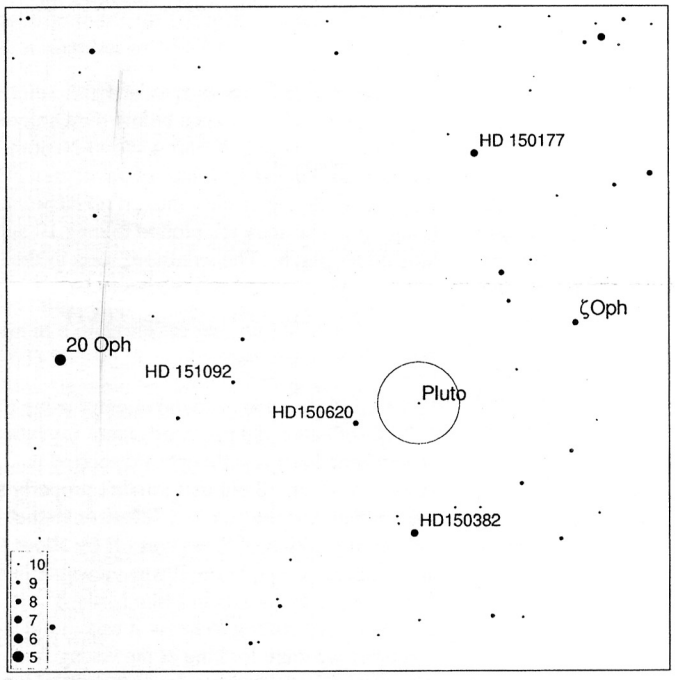

Chart 6: Pluto on July 30, 2000. Note that there are no stars brighter than magnitude 11.5 in the 30 arcminute field.

Upcoming NOVAC Meeting Programs

Craig Tupper

July 9

Radio Observations of Jupiter and the Sun

Dr. Jim Thieman, NASA

Radio JOVE is an educational project to involve secondary school students in collecting and analyzing observations of the natural radio emissions of the planet Jupiter and the Sun. Participating students build radio telescopes that they use to observe Jupiter and the Sun, unless they decide to only use signals from professional radio telescopes that are placed online. The project is a joint effort of NASA's Space Science Data Operations Office, the University of Florida Astronomy Department, the Florida SpaceGrant Consortium, high school teachers, and volunteers. You don't have to be a student to be interested: NOVAC's own John Avellone has been making radio observations of Jupiter for years, when he isn't making telescopes out of coffee cans! Dr. Thieman is an astrophysicist at the National Space Science Data Center (NSSDC) at Goddard, and is on the Radio JOVE team; his research interests are in planetary radio astronomy and magnetospheric physics.

August 13

Star Clusters

Ed Witkowski, NOVAC

Ed Witkowski, NOVAC's own Public Outreach Coordinator, will be bringing us the scoop on star clusters. What are they, where are they, and how can you best observe them? Ed will answer these questions and more.

September 10

TBD

October 8

TBD

November 12

Buying a Telescope

Tom Dietz, NOVAC

Just in time for the holidays, come hear what Ironman Tom has to say about purchasing a telescope, particularly for the first time or as a gift. There is a bewildering array of telescopes out there, and Tom will help you navigate the maze and make a wise choice, no matter what your budget.

PLEASE NOTE: the schedule of speakers is subject to change. Please check at
`http://users.erols.com/ctupper/NOVAC/speakers.htm`
for the latest info prior to the meeting.
What's YOUR interest? Let `ctupper@erols.com` know.
Come share and learn about YOUR favorite topic!

Highlights of NOVAC Meetings

MAY 3 NOVAC BOARD MEETING

19:30 Pete Johnson, President, called the board meeting to order.

The board discussed the upcoming NOVAC picnic on June 24. As in the previous two years, NOVAC will provide the hamburgers, hotdogs, and drinks and members can bring a side dish to share. It was decided to mail out a flyer to all NOVAC members a couple of weeks before the picnic.

The board discussed the new NOVAC web site. Pete Johnson will draft a set of rules for making updates to the website.

The ATM special interest group has made it's first purchase from the revolving fund that has been set up. Ten sets of 4.25" mirrors and diagonals were purchased for resale to members at cost.

The board decided to move the general membership meeting time from 6PM to 7PM as soon as GMU will allow it, hopefully in July.

Ed Witkowski listed the upcoming public outreach programs.

Craig Tupper listed the upcoming programs for the general membership meeting.

Pete Johnson adjourned the meeting at 21:00

JUNE 7 NOVAC BOARD MEETING

19:30 Pete Johnson, President, called the board meeting to order.

The board discussed activities for the upcoming NOVAC picnic on June 24 at Crockett Park. It was decided to have swap tables and to have a scope tuning/collimation session for anyone who would like some help in this area.

The board discussed the access problems at Crockett Park. Pete Johnson handed out copies of the new agreement that was drafted by the Fauquier County board that runs the parks. As it stands, the agreement is unacceptable to NOVAC and would render Crockett Park essentially unusable as a regular NOVAC observing site. Pete Johnson will continue his negotiations with the board to obtain an agreement that is acceptable to both sides. However, there is the possibility that we will lose Crockett as a regular observing site.

Pedro Martinez, NOVAC's Treasurer, reviewed the budget with the board.

GMU has approved moving the general membership meeting to 7PM beginning in July.

Pete Johnson informed the board that the old NOVAC Hotline phone number has been disconnected.

The board briefly discussed the NOVAC Star Party in September. At this point it is still planned to be held at Crockett Park.

Ed Witkowski listed the upcoming public outreach programs.

Craig Tupper listed the upcoming programs for the general membership meeting.

Pete Johnson adjourned the meeting at 21:00

JUNE 11 NOVAC GENERAL MEETING

18:05 Pete Johnson, President, called the meeting to order. The prospective and new members introduced themselves.

Pete Johnson discussed plans for the upcoming NOVAC picnic at Crockett Park and the current problems with the Crockett Park observing agreement with NOVAC.

Pete Johnson informed the membership that beginning in July, the general membership meetings will start at 7PM.

Pete Johnson demonstrated the new NOVAC web site.

Ed Witkowski listed the upcoming public outreach events.

Bob Gent made some Astronomical League and IDA announcements.

Tom Dietz outlined the club observing trip to Spruce Knob, WV on the weekend of June 3.

Ian Keith gave the sky tour.

There were two speakers for the main program. Steve Robinson gave a talk "High Energy Astrophysics for Amateurs" and John Nusbaum spoke about observing planetary nebulae.

Pete adjourned the meeting at 20:00

There were approximately 42 in attendance.

Submitted by Kevin Brown, Secretary

For Sale

$ 3,200

QUESTAR Standard, made in 1975, no. 5-CV-6101 BB, registered with Questar Co.

It was serviced by Company VII and the Powerguide was installed. Almost no mirror shift (a common problem with Qs). It has the low expansion mirror coatings, and the usual accessories: Questar Brandon eyepieces 16mm and 24mm, Televue adapter to accept non-threaded eyepieces, solar filter, Questar erector prism and original leather case.

I am selling it because I want to buy a larger aperture telescope.

Clear skies !

François-Marie Patorni

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New Members - April 21 through June 20

Kevin Brown

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WELCOME!

MARK YOUR CALENDAR!!

Beginning July 9, New General Meeting Time!

Meetings will start at 7:00 P.M.

A Visit to the Deutches Museum, Munich Germany

John Deriso

On a recent business trip, I had a chance to see Munich's Deutches Museum, which is a lot like our Smithsonian. A TV ad in my hotel mentioned a planetarium there, so I thought I'd check it out. I got there when they opened at 9:00 and caught the first showing. I hardly know a few words of German, but my limited familiarity with the sky was good enough to figure out what was happening. Most of the star (stern) names were recognizable on hearing them, and it was easy to recognize the Grosse Bar (Great Bear) and Grosse Hund und Sirius (Canis Major). The show was very well presented, including seasonal changes and planetary motion. It's great how the hobby is so universal that it transcends the language barrier.

The roof had a sundial garden; this has long been a second interest of mine. I took digital photos of every dial and its plaque; most interesting was the modern, machined, analemmic version which was of course right on the money, time-wise, when the clouds broke for a moment.

The next two floors were devoted to astronomy. Very nice displays of the solar system including much detail about the sun, lots of photos and models of the solar system, the galaxy, on out through the local group into clusters of galaxies. One floor had antique instruments such as astrolabes, quadrants, and dioramas of early observatories such as Herschel's monster scope. The 'scopes on display included early meters-long refractors and reflectors. Modern gear was represented, like Celestron and Vixen.

My general impression was that the museum tends to bias toward German invention to an obvious extent, while downplaying foreign contributions. But I plan to go back at the next opportunity to see the displays on 2 entire floors that I didn't have time for... they closed at5:00, and by then my legs were hurting! A great beer and schnitzel dinner at a nearby restaurant fixed that problem. All in all, I'd recommend this museum... especially the top two floors and the planetarium, to anyone who might get a chance to visit Munich.

Finally, I picked up a copy of Sterne Und Weltraum (Zeitschrift für Astronomie) at a newsstand...a very good astronomy magazine! Here's a chance for me to learn a little German from familiar topics!

(Continued from page 1)

What's Up?

four day old moon. I didn't look for anything in particular. The small crescent was very pretty, and I used the time to get reacquainted with the moon. I just wandered around the limb looking at craters, Mare Crisium, and Mare Fecunditatis. I remembered that shadows are all important when looking for lunar detail. The best place to search for and enjoy a lunar feature is along the terminator. Once an area becomes fully illuminated, the shadows and detail vanish. What looked like a striking crater or mountain range last night will become a ho hum object one night later.

Lunar Day 5. The Apollo 17 and 11 landing sites came into view. Both were fairly easy to find. Apollo 17 landed on a spit of ground, which, along with the Haemus Mts. separate Mare Serenitatis from Mare Tranquillitatis. There are a couple small craters adjacent to the landing site, which are of some help. Keep in mind that we cannot see any artifacts of the lunar landings with our telescopes, so don't expect to see the LEM sitting there. I figured if I got within 20 miles or so that was doing well. Apollo 11 came to rest almost diagonally across the Mare Tranquillitatis from 17. It also has a distinctive bit of land jutting into the sea, which can lead the way. While I was following the coastline south to Apollo 11, I came upon a series of very pretty ridges next to a crater named for Julius Caesar. The sunlight was just right, and the shadows of the ridges and valleys stuck out like a sore thumb.

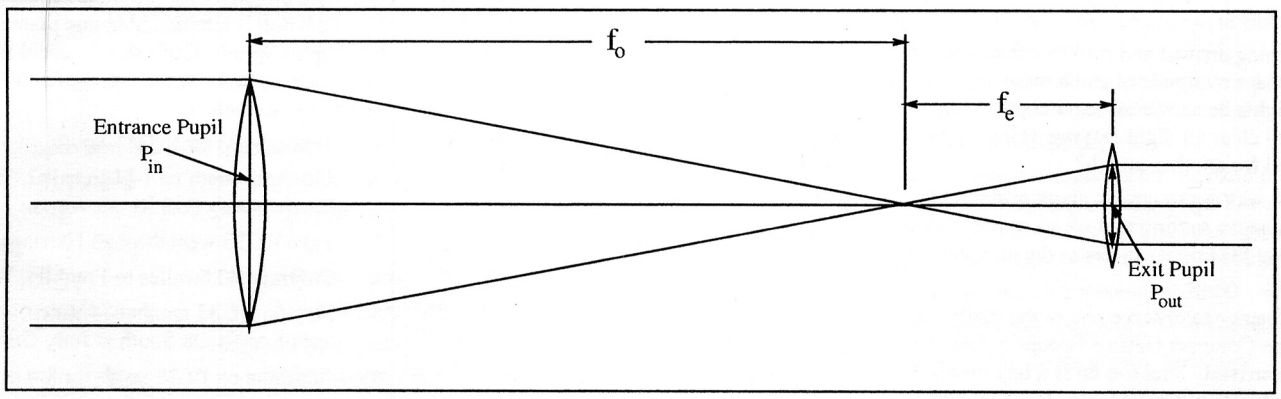
Lunar Day 6. This was the night of the first quarter moon. There are some nice big craters along the north-south centerline of the moon, and I had a good view of Hipparchus and Albategnius. Ptolemaeus is another giant crater, but only one edge was illuminated. It would take one more day for that one. Apollo 16 was next on my list, and I'm not sure I even came close. Apollo 11 was my starting point. I followed the coastline south to a big crater named Theophilus, and then I hung a right. The landing site is next to a shallow crater, Descartes, but I couldn't say with any assurance that I was even in the ballpark. So, on to Apollo 15. This site is just off the apex of the Apennine and Haemus Mountains. Most of the Apennine range was still in shadow, but there was enough visible for me to come mighty close to the landing area.

Lunar Day 7. We're just short of the Straight Wall. I still had a nice look at Ptolemaeus, Alphonsus, and Arzachel, three craters in a north to south line just south of the equator. Tycho is visible, but the rays are not all that obvious. It sure is crater heaven down south. I didn't even begin to try identifying the myriad holes in the ground down there. A lot of the features that caught my eye early on are now washed out by sunlight. Working around the terminator is the only way to go.

End of Part I. Coming next: Will our hero find and climb the Straight Wall? Does the Copernicus Hotel serve a continental breakfast? Are there any surprises in store for us? The answers to these pressing questions (and many more!) will be covered in the next thrilling edition of the newsletter. Meanwhile, Lynn and I want to wish a fond farewell to the Archinals. Brent's new position sounds like an exciting challenge, and as I see it, it is a well-earned chance to play with the big kids. It's like being signed by the New York Yankees. I was blest to have two experienced mentors during my early days as an amateur astronomer. Al Boldt and Brent Archinal were mentors long before the term became fashionable. If they saw a willingness to learn, they were right there to help. I can't begin to count the many nights when just the three of us sidestepped cow pies at Greenville Farm or later endured freezing fingers and toes at Crockett Park. They helped me to find my way around the sky, answered numerous dumb questions, and kept my interest piqued. Since then, I have tried to repay the debt by being as patient a teacher to others as they were to me. So, thanks, Brent. Keep in touch and Godspeed.

Derivation #2: Exit Pupil

Michael Mills



The **exit pupil** is the "virtual aperture" just behind the eyepiece through which all light rays emerge from the telescope. One can think of the exit pupil as the image of the **entrance pupil**, which is usually the objective of the telescope. The size of the exit pupil is a function of the telescope/eyepiece combination. The figure above illustrates one way to calculate the diameter of the exit pupil. When parallel rays enter the telescope they reach focus at the folal point, and emerge from the eyepiece parallel once again. The principle of similar triangles then gives us the diameter of the exit pupil:

$$\frac{P_{\text{out}}}{f_e} = \frac{P_{\text{in}}}{f_o} \Rightarrow P_{\text{out}} = P_{\text{in}} \frac{f_e}{f_o}$$

This can be arranged into more convenient expressions using the definition for magnification ($M = f_o/f_e$) and focal ratio ($R = f_o/P_{\text{in}}$):

$$P_{\text{out}} = P_{\text{in}}/M = f_e/R.$$

NOVAC Trips to Spruce Knob, West Virginia

July 28-30, 2000

Tom Dietz

The Northern Virginia Astronomy Club is planning a second trip to Gatewood Campground near Spruce Knob, West Virginia for the weekend of July 28-30, weather permitting.

Spruce Knob is situated in a remote part of Monongahela National Forest in east central West Virginia and is about a 4-½ hour drive from the Washington area. At an elevation of 4,868 feet above sea level, the summit is the highest point in the state. We plan to camp and observe at Gatewood Group Camping Area, which is a few miles away on the next ridge to the west and a bit less than 500 feet lower. A sheltered meadow adjacent to the camping area provides an excellent place to set up telescopes under skies with a limiting magnitude approaching 7 on a clear night.

There is no water or power at the six-site campground, so remember to bring adequate provisions in addition to your camping gear. The site has two vault-type toilets. Although the Forest Service doesn't accept reservations for the sites, there is no charge to camp. Each site is limited to two vehicles. Because non-astronomers might also be camping there, we encourage folks to double up on each spot, which can handle two to four tents each. If you arrive late and find that all six sites are taken, camping off the road is also permitted throughout Monongahela National Forest. This includes the meadow adjacent to Gatewood that will be the observing area. Another option is the 42-site Spruce Knob Lake Campground, which is about two miles from the observing area. There is a nominal charge to camp there.

The weather on the mountain can be fickle, even in the summertime, so it's a good idea to bring cold-weather gear even if you don't think you'll need it. During a trip last year in late July we experienced a forty-degree drop in temperature during one twenty-four hour period. It pays to be prepared. A solar shower is also a good item to bring, especially if we experience hot weather. Water is available at Spruce Knob Lake Campground, but no showers are available.

Look for more information concerning the trips on the NOVAC mailing list or contact Tom Dietz at tom.dietz@nasm.si.edu or 202-357-3334 (weekdays) or 703-319-1327 (evenings and weekends) as the dates approach. Diehard observers are welcome to arrive early on Thursday and/or depart late on Monday if they wish. There are, however, no rain/cloud dates scheduled. Should either trip be cancelled, the membership will be notified via the NOVAC electronic mailing list.

Finally, if you haven't been to the Spruce Knob area before, it's a good idea to plan to arrive before sunset. The route isn't too difficult, but finding the campground, getting a tent pitched, and setting up astronomical equipment is much easier before dark. We would also prefer that no one drive on to or off of the observing field after the end of astronomical twilight each night.

Spruce Knob Report

(Continued from page 1)

heard about the event. I would estimate that there were at least 20 people, with the biggest scopes being owned by Greg Dillon of Charlottesville (25" Dob) and NOVAC's president, Pete Johnson (24" dob).

As evening arrived and stars began to appear there was a real buzz of excitement on the field. Would this be a night to remember? Would the sky stay clear all night leaving us happy and fulfilled for another month?

Well, it was not to be. At about midnight the clouds began to form and we were reduced to scanning for bright objects in the moments of clearing.

I did manage to observe one of the really faint Hickson Compact Galaxy Groups before the clouds arrived. Hickson 66 is a tiny group of 4 faint galaxies in Ursa Major. Hickson 66A was the only one I could see. It was under 30" in diameter and was just visible with direct vision and was fairly easy with averted vision. A galaxy of similar size and brightness was in the same field but was not a member (MCG +10-19-103 for the record). Both of these galaxies were listed at 15.8 magnitude by Megastar but appeared to be more like magnitude 14.5 - 15.0 visually.

Craig Tupper asked to see a Hickson group and I suggested he look for Hickson 68 in Canes Venitici with his 10" Dob. This is one of the brightest Hickson groups; three of the galaxies are between magnitude 11.0 - 11.5 (NGC 5353 is the brightest) and the other two areabout 14th magnitude. A few minutes later he had them in the eyepiece. The three main galaxies in the group were bright and easy, as was a 4th galaxy, NGC 5371, not far away. We suspected the two fainter galaxies as well. Nice view!

My 6" F5 Jaegers scope proved to be ideal for chasing down bright objects in the brief moments of clearing. The globulars M4 and NGC 6144 and Antares made a fine sight in Scorpius. The bright globular M80 just to the north was small and tight compared to the looser M4.

The Lagoon, Trifid, Omega, and Swan nebulas were just wonderful in the 6" without any filters. M22 was a fine ball of stars in Sagittarius. M11, the Wild Duck Cluster, in Scutum was quite a sight as well.

The North American Nebula in Cygnus was well defined with an OIII filter. The 6" F5 combined with a 35 mm Panoptic yields a 2.91 degree field of view, just right for the North American. Several people got their first really good view of this large nebula.

The night went on like this (2 or 3 objects each time the sky cleared). In between these quick runs to the telescopes we had plenty of time to sit and chat and get to know one another better until about 3 AM, when people started heading off to get some sleep.

The forecast for Sunday night was not promising, so everyone left Sunday morning.

Even though the weather did not really cooperate, I enjoyed the weekend and am looking forward to more trips to this dark sky site in the future.

Directions to Gatewood Group Camping Area

Tom Dietz

Because of work on Briery Gap Road, we have located an alternate and better route to Gatewood Group Camping Area. The detour adds about 2 miles but provides better roads than the old route directly over the ridge on which Spruce Knob is situated. Anyone planning to head up to Spruce Knob should avoid Briery Gap Road until the work is completed. The new directions are below:

1. Take I-66 West to I-81 South.
2. Continue south on I-81 to exit 247B at Harrisonburg (US Rt. 33 West).
3. Take Rt. 33 west through Harrisonburg
4. Continue 42.5 miles to Franklin, WV.
5. Stay on Rt. 33 another 14 miles and turn left on to Rt. 28 South at Judy Gap.
6. Continue on Rt.28 south for 8.6 miles and then turn right on to Sawmill Run Rd. (CR28-10)
7. Bear left at the junction of CR28-10 and CR28-9. You'll see the first sign for Spruce Knob and Spruce Knob Lake Campground here.
8. Continue on CR28-10 for about 8.5 miles and turn right at the junction after the sign for Spruce Knob Lake and Spruce Knob. You'll see Spruce Knob Lake off in distance through the trees. Ignore the small signs for the Gatewood trail. These are not for the Gatewood Group Camping Area.
9. Drive 1 mile and turn left at the sign for Gatewood Group Camping area. The campground is one mile after the turnoff.

Upcoming Events

	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
JULY	25	26	27	28	29	30 •Observing at all sites	1 NEW MOON •Observing at all sites • NASM/Sky Meadows
	2 •Observing at all sites	3	4 •Earth at aphelion	5 •Board Meeting	6	7	8
	9 •General Meeting 7 pm @ GMU	10	11	12	13	14	15
	16 FULL MOON •ATM SIG Meeting	17	18	19	20	21	22
	23	24	25	26	27 •δ–Aqr Meteors Peak •Neptune at opposition	28 •Observing at all sites •**SPRUCE KNOB**	29 •Observing at all sites •**SPRUCE KNOB** • NASM/Sky Meadows
	30 NEW MOON •Partial Solar Eclipse •Observing at all sites •**SPRUCE KNOB**	31	1	2	3	4 •Observing at all sites	5 •Observing at all sites
AUGUST	6 •Observing at all sites	7	8	9 •Board Meeting	10 •Uranus at opposition	11	12 • Perseid Meteor Peak
	13 •General Meeting 7 pm @ GMU	14	15 FULL MOON	16	17	18	19
	20 •ATM SIG Meeting	21	22	23	24	25 •Observing at all sites	26 •Observing at all sites
	27 •Observing at all sites	28	29NEW MOON	30	31 •Equation of time = zero	1 •Observing at all sites	2 •Observing at all sites

NOVAC Notices and Benefits

Discounts on *Sky & Telescope* and *Astronomy.*

As a member of NOVAC, you can get astronomy magazine subscriptions at a discount. To obtain *Sky & Telescope* for $29.95 (instead of the standard $37.95), make your check out to "Sky Publishing Co." You can subscribe to *Astronomy Magazine* for $29.00 for one year. Make your check payable to "Kalmbach Publishing Company". In each case, note on the check: "new subscription" or "renewal." If a renewal, include your customer number. Send your check to Treasurer Pedro Martinez, Jr., 6319 Anneliese Dr., Falls Church VA 22044.

You can also order any publication directly from Sky Publishing at a 10% discount. Just mention the Club Discount Plan and that you are a member of NOVAC.

Discount on Books

NOVAC is participating in the discount book sales program offered by Kalmbach Publishing. They will sell our members any astronomy-related book in their catalog for 25% off the list price when we send in a group order. Kevin Brown is coordinating the sales. If you are interested, please see him at a meeting, or call him at home (703) 503-9523 to place an order. Make your check payable to "NOVAC" for the price of the book minus the discount, when you place the order. We anticipate doing this 3 - 4 times a year if demand warrants.

Club Telescopes and Binoculars

NOVAC makes available three six-inch Newtonian reflectors for club members to check out, free of charge, and use for a limited time.

One telescope is a Celestron model SP-C6 on a Super Polaris German equatorial mount and wood tripod. The telescope comes with Orion Ultrascopic 10mm and Meade MA 25mm eyepieces with 1.25-inch barrel sizes.

The second telescope is a homemade six-inch f/5 reflector on a Dobsonian mount, and comes with a 25mm Kellner eyepiece. It is easy to transport to dark sky sites, and easy to use.

The third telescope is a six-inch, f/8 Meade Dobsonian reflector.

To borrow a telescope you will need to show your NOVAC observing pass and leave a $500 (for the Celestron) or $250.00 (for the Dobson) security deposit. To borrow the Celestron, contact Doug Mistler at (703) 437-0513; for the Dobson, contact Bob L'Hommedieu at (703) 978-0946. Note: Checks must be made payable to "NOVAC". The club also has a pair of 10x50 binoculars available for members to borrow. They are kept in the club library in the back of the planetarium, and can be checked out after the regular monthly meeting, for a period of one month. Please show your observing pass.

NOVAC Library

NOVAC has established a library at George Mason University for use by NOVAC members. Books may be checked out and returned only at the monthly meetings. Members may check out books for one month at a time. To borrow books, see NOVAC Librarians Pedro Martinez or Craig Tupper at the monthly meeting.

The NOVAC library seeks book donations to the library. If you have any astronomy books or materials you are thinking of discarding, please consider a donation to the NOVAC library.

A complete list of all library holdings is available upon request.

General Membership Meetings

General Membership Meetings are held at George Mason University (GMU), Fairfax Campus, off Ox Road (Rt. 123) on the second Sunday of every month. To reach GMU, take either Rt. 66 to Ox Rd. (South) or Braddock Rd. to Ox Rd. (North). Enter GMU at the main entrance off Ox Rd. (University Drive) and proceed to Parking Lots F, G, or H for free parking. Pay Parking is also available in the Parking Garage.

The meetings are in the Lecture Hall, next to Fenwick Library, on the North side of campus across Patriot Circle from the parking lots. Meetings start at 7:00 p.m.

Trustee Meetings are held on the first Wednesday of every month. Members who are not trustees, but are interested in attending, should contact a club officer or board member for further information.

NOVAC On-line

NOVAC maintains an e-mail mailing list. Messages sent to the list include reminders about scheduled observing sessions, announcements for unscheduled sessions, requests for quick observing session summaries, MIR observability predictions, etc. For more information, send a message to Bob L'Hommeddieu, bobcat@erols.com.

NOVAC Observing Site Rules

C. M. Crockett Park:

The agreement between NOVAC and Crockett Park expires at the end of June. Currently the board is working on a new agreement that will allow the club continued access to the park. Until further notice, do not attempt to observe at Crockett Park without first consulting the web page or a board member. See page 1 for more details about the problem at Crockett.

Savage Farm Site: Weekends (Friday/Saturday/Sunday): NOVAC has unlimited access to the park for all weekends.

Weekdays (Monday-Thursday.): For unscheduled observing sessions, contact the park manager, Paul McCray, at (703) 729-0596 or <wodtrail@erols.com> at least 24 hours in advance, and leave a message with your phone number or e-mail address. You may use the site for that session ***unless*** you hear from Mr. McCray stating otherwise.

No loud radios, alcoholic beverages, or loose pets. Pick up after yourself, and do not leave any trash behind. Make sure the gate is locked whenever you are in the park, and when you leave. We are guests of the NVRP and could have our access to this site revoked at any time if it is abused.

Mickey Gordon Regional Park:

There is a light pole on the road entering the park and it is a problem near the entrance of the park. It is better to set up further back in the park, or on a lower field behind the baseball diamond to escape the light.

The park is available without notice to all members seven days a week. As sports season begins, we will post the schedule when the lighted baseball facility will be in use.

Directions to NOVAC Observing Sites

C. M. Crockett Park:

From the Washington, D.C./Northern Virginia area, go west on I-66 to Exit 43A in Gainesville onto Rt. 29 South toward Warrenton. After 11.8 miles on Rt. 29, stay left (toward Culpeper), to bypass

Warrenton (but still on Rt. 29 S.) Go about 1 mile to the Rt. 643 exit, Meetze Road. Turn left (East) on Rt. 643. Go 7.5 miles on Rt. 643. Watch for the C.M. Crockett Park sign on your right, and turn right into the Park Entrance Road.

Alternate directions to Crockett

From Washington, D.C./Northern Virginia, go West on I-66 to exit 44. (234 bypass around Manassas). Take 234 bypass to Rt. 28 West. Stay on Rt. 28W for about 13.7 miles, through Nokesville, Catlett and Calverton. Turn right at Rt. 643 (store on corner). Go 1 mile to Crockett Park entrance road on left.

Savage Site:

From D.C., I-66 West to Route 17 North. Stay on Route 17 North until it intersects with Route 50 at Ashby Gap. Turn left onto Route 50 and go 1.0 mile and turn right on Route 601. Continue on Route 601 (Blue Ridge Mountain Road) for 8.4 miles (about two miles past the main gate of the FEMA installation). Turn right at the park entrance after passing the gateposts with *Belle Allee* and *Ball Alley 1875* on your right.

The park entrance on Route 601 is marked by a small NOVAC sign. As you turn into the park, go straight ahead until you reach the gate, which is secured by both a keyed padlock and a combination lock. These locks are located to your left behind the gate as you face it from the outside. The combination is on your NOVAC observing pass. **Always** lock the gate behind you. The NOVAC lock **must be locked to the keyed lock, not to the chain,** to allow emergency access by the fire department. Drive to the observing area (the stone patio next to the house). There is very limited parking at the observing area itself, so please park in the parking area on the right as you face the patio.

Alternate Directions to Savage via the Dulles Toll Road

Take the Dulles Toll Road west to the Dulles Greenway. Take the Greenway west about 14-15 miles to where it ends at Rt. 7 near Leesburg. Stay in the left-hand lane to go to the exit for Rt. 7 West. Take Rt. 7 West for about 18 miles to Route 601, Blue Ridge Mountain Road, which is at the top of Snickers Gap and marked by a flashing yellow light on Rt. 7. Turn left onto Rt. 601 and continue 2.4 miles to the park entrance, which is on the left about two-tenths of a mile past a driveway on the left with a stone wall marked with the name "Ben Lomond." There is a white "NOVAC" sign nailed to a large tree to the right at the entrance to the somewhat rutted gravel driveway that leads to the park. Drive up to the white gate at the top of the hill. The combination for the gate is on your observing pass. The driveway curves down and around to the right to the observing area after you pass through the gate. Please lock the gate behind you and remember to use parking lights only as you approach the observing area, which is on the left as you reach the lawn in front of the old house.

Parking at the observing area itself is much more limited at Savage than at Crockett or Mickey Gordon. Try to leave an access lane to the area around the stone patio. If possible, unload your telescope and then park your car away from the area. There are plenty of places to park around the lawn and even south of the old house. This will allow those who arrive later to have access to whatever spots remain without having to lug equipment across the lawn. If you plan to leave early, please be considerate of others and either pack up away from the stone patio or avoid using backup lights when you drive down to pack up your equipment.

Mickey Gordon Regional Park:

The park is located fifteen miles west on Rt. 50 from the intersection of Rt. 28 and Rt. 50. It is only a 20-minute drive from the Centreville area and should be a convenient site for most members in western Northern Virginia. Directions to the park: take Rt. 66 west to Rt. 28 north. Take Rt. 28 to Rt. 50 West. Go 15 miles until you see the brown Mickey Gordon Regional Park sign. Make a right on Rt. 627, Carters Farm La. Go a few hundred yards to the park entrance on the left. The park has a gate but should never be locked.

Site Locations

Here are the locations of four observing sites as provided by NOVAC members:

- Savage: 39 ° 04.7' N; 77 ° 51.7' W
- Crockett: 38° 37' N; 77° 43' W
- Big Meadows: 38°32' N, 78°26' W
- Little Bennett Regional Park: 39°17.0' N, 77°17.5' W
- Mickey Gordon 38°58.58' N, 77°42.31' W

Stay Informed!
Join the NOVAC e-mail list today!
See page 1 for details.

The NOVAC Newsletter is the official publication of the **Northern Virginia Astronomy Club** and is published six times per year.
The *NOVAC Newsletter* is sent to members of NOVAC as a regular membership benefit.

Membership in the Northern Virginia Astronomy Club is $18.00 per year and is open to anyone interested in astronomy or the sciences. Additional memberships at the same address without additional copies of the newsletter are $6.00 per person. Contact Secretary Kevin N. Brown, 5755 Walnut Wood Ln. Burke, VA 22015 703-503-9523.

All notices of change of address should be sent to Kevin N. Brown. Please include both old and new addresses.
NOVAC does not knowingly accept advertising for products of inferior quality nor does it accept responsibility for the quality of advertised products.
NOVAC members are invited to submit articles for publication in the *NOVAC Newsletter*. The editor reserves the right to edit all materials submitted.
Send article submissions to the Editor, Michael Mills mjmills@fpcc.net, (703)333-5075, 5001 Ridgewood Road, Alexandria, VA 22312.
The deadline for submissions is three weeks in advance of publication, e.g., June 10 for the July/August newsletter.

Inside This Issue:

New Meeting Time: 7 PM

NOVAC

The Northern Virginia Astronomy Club

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